June 17, 2002

MEMORANDUM TO: James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Richard B. Ennis, Senior Project Manager, Section 2 **/RA/**
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2, FACSIMILE TRANSMISSION, ISSUES TO BE DISCUSSED IN AN UPCOMING CONFERENCE CALL (TAC NO. MB3386)

The attached information was transmitted by facsimile on June 6, 2002, to Mr. Ravi Joshi of Dominion Nuclear Connecticut, Inc. (the licensee). This information was transmitted to facilitate a upcoming conference call in order to determine an appropriate response time for the attached set of questions associated with the licensee's submittal dated November 6, 2001. In the submittal, the licensee requested a revision to the Millstone Nuclear Power Station, Unit No. 2 Technical Specifications associated with the spent fuel pool. This memorandum and the attachment do not convey a formal request for information or represent an NRC staff position regarding the licensee's request.

Docket No. 50-336

Attachment: Issues for Discussion in Upcoming Telephone Conference

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ISSUES FOR DISCUSSION IN UPCOMING TELEPHONE CONFERENCE

REGARDING PROPOSED AMENDMENT TO TECHNICAL SPECIFICATIONS

SPENT FUEL POOL REQUIREMENTS

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO 50-336

By letters dated November 6 and December 27, 2001, Dominion Nuclear Connecticut, Inc. (the licensee) submitted a proposed amendment to the Technical Specifications (TSs) associated with the spent fuel pool for Millstone Nuclear Power Station, Unit No. 2 (MP2). Specifically, the licensee has proposed changes that would increase the nominal average fuel assembly enrichment for all regions of the spent fuel pool, the new fuel storage racks (dry), and the reactor core; allow fuel to be stored in previously blocked fuel cells; credit spent fuel pool soluble boron for reactivity control during normal conditions, and reduce the boraflex reactivity credit in Regions A and B of the spent fuel pool. The Nuclear Regulatory Commission (NRC) staff has reviewed the information the licensee provided that supports the proposed TS changes. In order for the staff to complete its evaluation, the staff requires the following information regarding your submittal dated November 6, 2001.

1. Your submittal stated that the boraflex in-service testing program consists of three parts. The first part is a direct examination of the boraflex material. The second part is blackness testing, and the third part is spent fuel pool silica monitoring. The staff requests the licensee to provide a discussion of the following questions pertaining to the licensee's assessment of the boraflex material condition in Regions A and B:

    a. What method does the licensee use to choose the panels to inspect? For instance, does the licensee perform Boron-10 Areal Density Gage for Evaluating Racks (BADGER) testing?

    b. Does the licensee have plans to perform additional blackness testing prior to and after adding spent fuel to Regions A and B?

    c. The licensee's submittal states that spent fuel pool silica concentrations are measured and monitored for any unusual trend. Using the silica concentration can help determine the average boraflex loss but will not identify the most degraded panel. What is the licensee's method of accurately determining boraflex degradation (e.g., BADGER testing)?

    d. What are the licensee's current projections for boraflex degradation in Regions A and B? Also, does the licensee use RACKLIFE to make these projections?

e. The licensee stated that the criticality analysis used 0.025 grams B-10/cm^2 (25% of the original design density) as the boraflex density. What are the actual boraflex density values in Regions A and B and how do these values compare to the actual boraflex density values in the spent fuel pool?

2. Your submittal stated that in 1992, the NRC approved an amendment that allowed 40 cells in Region B to be blocked for the purpose of compensating for an error in a previous criticality analysis. The licensee now proposes to store spent fuel underneath the cell blockers. Placing spent fuel underneath the cell blockers results in a configuration not originally intended for the spent fuel pool. The staff requests the licensee to describe the program that verifies the material condition of these cell blockers and the cells that have been blocked for approximately 10 years.

3. Your submittal stated that the changes to current Technical Specification (CTS) 3/4.9.18 make the specification consistent with NUREG 1432 "Standard Technical Specifications - Combustion Engineering Plants" (STS) 3.7.18. The changes made to CTS 3/4.9.16.2 and 3.9.17 to proposed Technical Specification (PTS) 3/4.9.17 make the PTS similar to STS 3.7.17 adjusted for plant specific nomenclature and design. However, the PTS differs from the STS in that the applicability does not have the STS words "and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool" and Required Action A.2.2 is not present. Since the changes to these specifications seemed to be based on the STS with the intent on consistency, no justification is provided for this deviation from the STS. Provide a discussion and justification for this deviation from STS 3.7.17.

4. CTS 4.9.16.2 and 4.9.17 specify that the spent fuel pool (SFP) boron concentration be verified to be within the specified limit within 24 hours prior to movement of a fuel assembly, a consolidated fuel storage box or a shielded cask. In addition, CTS 4.9.17 also requires that the boron concentration be verified every 72 hours during the movement of fuel assemblies and consolidated fuel storage boxes. PTS 4.9.17 retains the 24-hour verification and also requires that the boron concentration be verified every 7 days. The justification for the 7-day frequency states that it is a more conservative requirement than the current requirements because the verification is performed whenever fuel is stored in the pool and there is no corresponding existing surveillance. The staff agrees that this change is a more restrictive change except for that time period when fuel assemblies are stored in the pool and they are being moved. In this case, there is a corresponding existing surveillance whose frequency is every 72 hours. For this aspect of the change, the change is less restrictive (72 hours to 7 days). No justification is provided for this less restrictive change. Provide a discussion and justification for this less restrictive change.

5. CTS 4.9.16.2 and 4.9.17 specify that the SFP boron concentration be verified to be within the specified limit within 24 hours prior to movement of a fuel assembly, a consolidated fuel storage box, or a shielded cask. PTS 4.9.17 retains the 24-hour verification. The submittal provides an analysis for a SFP boron dilution accident. Based on this analysis, one could conclude that boron concentration verification prior to movement should be retained, but that the frequency "within 24 hours prior to movement" should be changed to a frequency that is less than 24 hours. One could also conclude based on the discussion provided in the analysis on SFP water level

controls, alarms, and operating procedures and the revised Bases for 3/4.9.17, that this surveillance is not necessary. Provide a discussion and justification on the necessity of this surveillance and the adequacy of the specified frequency.

6. Your submittal stated that the changes to CTS 3/4.9.18 make the specification consistent with STS 3.7.18. PTS 3.9.18(a), (b)(1), b(2), and (c) do not seem to be consistent with STS 3.7.18. STS 3.7.18 contains the words "or in accordance with specification 4.3.1.1." The changes made in converting CTS 5.6.1 to PTS 5.6.1.e), f), g) and h) specify the criteria for storing fuel assemblies in Regions A, B, and C of the SFP similar to the storage criteria specified in STS 4.3.1.1.e and f. No justification for this deviation to the STS is provided. Revise PTS 3.9.18(a), (b)(1), (b)(2) and (c) to be consistent with STS 3.7.18, as modified by plant specific characteristics, or provide a discussion and justification for this deviation.

7. Your submital stated that the changes to CTS 3/4.9.18 make the specification consistent with STS 3.7.18. PTS 3.9.18(a), (b)(1), (b)(2), and (c) do not seem to be consistent with each other and with the STS. PTS 3.9.18(a) and STS 3.7.18 use the same words "The combination of initial enrichment and burnup of each fuel assembly..." PTS 3.9.18(c) also uses the same words except "each fuel assembly" is changed to "each consolidated fuel storage box". PTS 3.9.18(b)(1) and (b)(2) substitutes the word "a" for "each" in the phrase "each fuel assembly". No justification is provided as to why this substitution was made in PTS 3.9.18(b)(1) and (b)(2). The change could limit the number of fuel assemblies with an initial enrichment and burnup within the specified limits to be stored in Region C to one fuel assembly. Revise PTS 3.9.18(b)(1) and (b)(2) to be consistent with STS 3.7.18, or provide a discussion and justification for this deviation.

8. CTS 5.6.1 is replaced by PTS 5.6.1 which is patterned after STS 4.3.1 as modified by plant specific nomenclature and design characteristics. PTS 5.6.1.c) and d) specify the K_{eff}'s for the SFP if flooded with unborated and borated water respectively. The K_{eff}'s include an allowance for uncertainties as specified in PTS 5.6.1.c) and d). However, no mention or reference to a document is made as to where these uncertainties can be found as is done in STS 4.3.1. Revise PTS 5.6.1.c) and d) to reference the document(s) where the allowance for uncertainties can be found, or provide a discussion and justification for this deviation.

9. On page 6 of Attachment 1 of your submittal, the paragraph related to Design Feature 5.6.1a stated that the proposed change "acknowledges an NRC requirement" stated in an SER related to Westinghouse topical report WCAP-14416-P. In addition, the paragraph related to Design Features 5.6.1b through 5.6.1h stated that "[t]he wording format of these proposed design features is intended to comply with the NRC SER contained in WCAP-14416-NP-A." Please state the requirements and the design features eluded to in the SER.

10. In the last paragraph on page 8 of Attachment 1 of your submittal, it is stated that individual pins may have an enrichment as high as 5.0 w/o U-235. Does every assembly containing these highly enriched individual pins have an assembly average that is more conservative than accounting for individual pins?

11. On page 9 of Attachment 1 of your submittal, in the middle of the fourth paragraph, it is stated that the boraflex gap model has been made significantly more conservative. What exactly was done to accomplish this?

12. On page 10 of Attachment 1 of your submittal, the last sentence of the third paragraph, states that "[i]f axial blankets are present, then the center zone average enrichment would be used." Please clarify.

13. In the last paragraph on page 12 of Attachment 1 of your submittal, please clarify the apparent contradiction between the statements made in the following two sentences:

> "The SFP heat load analysis of record maximizes heat load by having all SFP storage locations filled with fuel at the end of plant life."
>
> "The Batch B fuel assemblies have a decay time > 16 years, which is a longer decay time than the decay time of any fuel in the heat load analysis of record."